

To: Greenbank Marsh Restoration Project Stakeholders
From: Greenbank Beach and Boat Club, Whidbey Island Conservation District
Subject: Status Update for the Marsh Restoration Project
Date: February 3, 2020

Greenbank Beach and Boat Club, Inc. (GBBC) and Whidbey Island Conservation District (WICD) have recently decided not to seek funding for constructing the Greenbank Marsh Restoration Project at this time. We want to explain and provide background on this decision to the many people who are interested in the project.

Background on Our Work to Date

Over the past several years, GBBC and WICD have studied and developed plans for reconnecting the Greenbank Marsh to Holmes Harbor by means of an open tidal channel. The purpose for reconnecting tidal flow into the marsh is to restore its natural drainage patterns and ecological functions. In response to input from government agencies, non-governmental stakeholders and interested community members, our planning process has focused on evaluating the potential impacts of the proposed project. The evaluation has included working with technical consultants to study such issues as the ecology of the marsh and nearshore area, coastal sediment transport patterns, flooding and drainage, the geohydrology of the local aquifer and shallow water table, cultural resources, and legal responsibilities related to operating and maintaining the existing drainage infrastructure.

We have tried to keep the community informed of the findings of this evaluation through annual public presentations and by convening meetings of the Greenbank Marsh Working Group (“Working Group”), which is a group of residents and government staff who are interested in the project. Technical memos and draft design plans have been posted on WICD’s website.

Predicted Impacts of Tidal Flow

One of the key potential impacts that local residents and the Island County Health Department (ICHD) identified is the effect of allowing unrestricted tidal flow into the marsh on local water supply wells and the shallow water table. We asked our consultants to do field investigations and computer modeling to evaluate this important concern. The evaluation included installing groundwater monitoring wells and monitoring the response of the deep aquifer and shallow water table during two sets of pumping tests. We used the data from these tests to calibrate engineering computer models, which predict how the aquifer and shallow water table would respond during a range of water surface levels in the marsh. The range represents average and peak flow conditions of high tides combined with high rainy season runoff from the surrounding watershed.

The analysis concluded that allowing unrestricted tidal flow into the marsh would not affect local water supply wells tapping the deep aquifer, because a well-documented “confining layer” located about 40 feet below the ground surface isolates the aquifer from the surface water. But the analysis also concluded that unrestricted tidal flow into the marsh would have a significant effect on the local shallow water table, raising it up to 12 inches under peak conditions at various locations along North Bluff Road and Shoreline Drive. Not only would the water table be higher, but it would also tend to be more brackish than it currently is. Technical memos documenting the analyses will be uploaded into the project’s file on WICD’s website this spring.

Engineering Approaches to Reduce the Predicted Impacts

The Working Group and other community members have made it clear that they are concerned about the potential impact of a higher and more brackish water table on their septic systems and landscaping. To address these concerns, the project studied various engineering alternatives for eliminating or reducing the predicted impacts. We first considered installing a self-regulating tidegate at North Bluff Road to restrict the quantity of tidal flow into the marsh. We eventually rejected the tidegate idea, because it may have impaired fish passage (compared with an unrestricted channel) and, more importantly, our consultants concluded that unrestricted tidal flow is needed to sweep out sediment from the channel, and ensure that it remains open over the long term.

We then considered installing a detention pond and pumping station on GBBC’s lagoon property and constructing a subsurface drain along the north side of North Bluff Road. While these facilities would be technically feasible, GBBC and WICD believed that it would be unrealistic for a volunteer homeowners association such as GBBC to commit to permanently operating and maintaining them. In addition, we feel it will be impossible to mitigate the project’s water table impacts in isolation from the impacts that are expected to happen naturally over the next few decades in response to predicted sea level rise: drainage impacts from sea level rise will eventually overwhelm whatever additional drainage capacity that the proposed new system could provide. Already, the existing (2018) FEMA base flood elevation map includes all North Bluff Road properties between Wonn Road and Shoreline Drive, and the flood elevation is expected to rise further in the years ahead.

Conclusion

In summary, GBBC and WICD decided that due to the project’s predicted impacts on the shallow water table at neighboring North Bluff Road and Shoreline Drive properties, it is uncertain whether Island County would issue the necessary permits for construction. Furthermore, we feel that GBBC cannot reasonably commit to permanently operating and maintaining the new infrastructure that will be needed to mitigate the impacts. Looking forward, in the short term GBBC plans to use the engineering analysis from the marsh restoration study to evaluate ways to improve drainage capacity of the existing stormwater outfall on its lagoon property, while improving ecological conditions on its marsh and lagoon parcels at a more modest scale. Over the long term, we will continue to look for opportunities to address larger-scale drainage and ecological objectives in Greenbank Marsh. We thank those who have supported the project and look forward to continuing working with you.